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ABE 29000

Homework 5

October 8, 2016

This week, Dr. McMillan gave a presentation to the class on Challenges and Opportunities in Environmental and Natural Resources Engineering. She shared with us some interesting maps and photos and statistics about water usage around the globe, the country, and the state, and how dynamic the need for and usage of water actually is. It was really interesting to see the US Drought Monitor maps and how they changed from year to year, as well as the slides that showed the evidence for climate change that showed how the plant hardiness zones have shifted north in the last twenty years. I also really enjoyed her own pictures of the flood plains that are right in Purdue’s backyard, and how drastically those changed in the span of one year.

Though I did not understand fully the research and projects that Dr. McMillan shared with the class, I found the work to be very interesting. She showed pictures of drainage ditches she has created and wetland restoration projects she has worked on. I was very impressed with the expected benefits of the restoration projects that she listed, including improved habitats for various organisms and improvements in water quality. She also showed the type of undergraduate research that she supports, that include using drones to monitor soil, air, and water quality, as well as researching climate change and global water and food security. I found these very interesting, and I hope to be able to speak with her in the future on the opportunities she may have that I would be able to work in.

Dr. McMillan also shared a lot of useful information on how biological engineers, like I hope to be, can have a positive impact on the environment. She told us that our projects and the focus of our impact can depend on the environmental and water quality problems that we are most concerned about. These concerns differ from person to person and depend on where one lives and works. I have no experience in an agricultural setting, so I don’t have the background knowledge on the water quality issues affecting rural areas due to runoff from agriculture, but I have lived in a suburban area my entire life, so I have seen how runoff from parking lots and streets can be a problem for suburban and urban areas. This subset of environmental engineering can be how I focus my energy and projects in my future.